

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SAMI KIRIAKI and WILLIAM R. KRENIK

Appeal No. 1997-0621
Application 08/368,679¹

ON BRIEF

Before HAIRSTON, KRASS and LALL, Administrative Patent Judges.
LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection² of all the pending claims 1 through 20.

¹ Application for patent filed January 4, 1995.

² An amendment after the final rejection was filed [paper no. 6] and was entered in the record [paper no. 7].

The disclosed invention relates to a high speed FIR filter architecture that consumes less power than the existing architectures, eases circuit implementation and improves performance in terms of dynamic range and linearity. The invention is further described by the following claim.

Representative claim 1 is reproduced as follows:

1. An FIR filter having an input signal and a filtered output, comprising:

a plurality of multipliers, each said multiplier including a first multiplier input, a second multiplier input and an output, each said first multiplier input receiving a signal representing an FIR coefficient;

a plurality of sample and hold circuits, each of said plurality of sample and hold circuits including a first output and operable to sample said input signal and hold the value of said input signal on said first output for a predetermined time;

a plurality of multiplexers, each comprising a plurality of multiplexer inputs and a second output, at least two of said second outputs each coupled to one of said second multiplier inputs, and at least one of said plurality of multiplexer inputs of a first predetermined number of multiplexers coupled to said first output of a first of said sample and hold circuits; and

a summer connected to said output of each of said multipliers, said summer having an output which is said filtered output of said FIR filter.

The reference relied on by the Examiner is:

Lish

5,050,119

Sept. 17, 1991

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Claims 1 through 20 stand rejected under 35 U.S.C. § 103 as being obvious over Lish and under obvious-type double patenting over claims 1 to 20 of S.N. 08/368,680.

Reference is made to Appellants' brief and the Examiner's answer for their respective positions.

OPINION

We have considered the record before us, and we will reverse the rejection of claims 1 through 20.

With respect to claims 1 through 20, the Examiner has failed to set forth a prima facie case of obviousness. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the art, or by implications contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." Para-Ordnance Mfg. v. SGS Importer Int'l, Inc.,

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73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995),
cert. denied, 117 S.Ct. 80 (1996) citing W. L. Gore & Assocs.,
Inc. v. Garlock, Inc., 721 F.2d 1540, 1548, 220 USPQ 303, 309
(Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to claim 1, we have reviewed the Examiner's rejection [answer, pages 2 to 3], the Examiner's response to Appellants' arguments [answer, pages 4 to 5] and Appellants' corresponding arguments [brief, pages 3 to 4]. We agree with Appellants that Lish does not show the circuit configuration claimed in claim 1. For example, Lish does not show the limitations: "a plurality of multipliers ... a FIR coefficient" (instant claim lines 2 to 4); "a plurality of sample and hold circuits ... time" (instant claim, lines 5 to 7) and "a plurality of multiplexers ... circuits" (instant claim, lines 8 to 12). The Examiner, pointing to figures 4A and 4B in Lish , contends that "[i]t would have been obvious to a person having ordinary skill in the art to design the claimed invention according to Lish's teachings because the reference is a FIR filter having a plurality of switching circuits for selecting the desired inputs to certain multipliers" [answer, page 3]. The Examiner does not explain

how the specific connections among the claimed elements are made obvious and why. The Examiner, in his response [answer, page 5], contends that claim 1 does not call for the input signal Vin to be directly connected to each sample and hold circuit. However, it is clear from the limitation "a plurality of sample and hold circuits, each ... to sample said input ..." (instant claim, lines 5 to 7) that the input signal has to be connected to each sample and hold circuit directly. If not, the particular sample and hold circuit will not be sampling the input signal. Furthermore, the Examiner has not addressed at all the limitation "a plurality of multiplexers, each ... circuits" (instant claim, lines 8 to 12). Thus, we do not sustain the obviousness rejection of claim 1 over Lish. With respect to dependent claims 2 to 10, they at least contain the limitations discussed above. Therefore, we do not sustain the obviousness rejection of these claims.

Regarding the method claim 11, it is directed to the embodiment of Appellants' figure 1. It contains the limitations corresponding to those discussed above, for example, "supplying ... multiplier" (instant claim, lines 3 to

4), "providing said input signal ... output signal" (instant claim, lines 5 to 6) and "multiplexing ... in a round robin manner ... multipliers" (instant claim, lines 7 to 8). Thus, we cannot sustain the obviousness rejection of claim 11 over Lish for the same rationale. Similarly, we do not sustain the obviousness rejection of the dependent claims 12 to 16 over Lish.

With respect to the independent method claim 17, it is directed to Appellants' embodiment of figure 2 where the roles of the outputs of the FIR coefficients and the outputs of the sample and hold circuits are interchanged relative to those in figure 1. The Examiner has not addressed any specifics of the claim. For similar reasons as for claim 11, we cannot sustain the obviousness rejection of claim 17 and its dependent claims 18 to 20.

Obvious-type Double Patenting Rejection

The Examiner states:

Claims 1 to 20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending application Serial No. 08/368,680. Although the conflicting claims are not identical, they are not patentably distinct from each other because the scopes of the invention are [sic, is]

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identical. It is noted that the master/slaver [sic, slave] features in the copending application are not essential features [answer, page 4].

Even though Appellants request, [brief, page 4], that this rejection be held in abeyance until the claims in the two applications are in allowable form but-for this issue, we, nevertheless, believe, after studying the claims in the copending application, Serial No. 08/368,680, that this rejection cannot be sustained since no conflicting claims appear in the two applications. More specifically, as an example, master/slave sample and hold circuits are configured in the circuitry of the claims of the copending application. They are not disclosed in the instant application. The mere assertion, without more, by the Examiner that the master/slave features in the copending application are not essential features does not negate the claimed difference between the two applications. Thus, we do not sustain the obvious-type double patenting rejection of claims 1 to 20 in this case.

In summary, we have not sustained the obviousness rejection of claims 1 to 20 over Lish. We also have not sustained the obvious-type double patenting rejection of

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claims 1 to 20.

DECISION

The decision of the Examiner rejecting claims 1 through 20 under 35 U.S.C. § 103 over Lish, and over the judicially created doctrine of obvious-type double patenting is reversed.

REVERSED

	KENNETH W. HAIRSTON)	
	Administrative Patent Judge)	
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	ERROL A. KRASS)	BOARD OF
PATENT	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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)	
	PARSHOTAM S. LALL)	
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